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EXAMINER	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/844,759	GARCIA-LUNA-ACEVES ET AL.	
	Examiner	Art Unit	
	DOHM CHANKONG	2452	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 April 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,6-12 and 15-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 2, 6-12, and 15-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *4/14/2009*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This action is in response to Applicant's request for continued examination. Claims 1, 7, and 10 are amended. Claims 3-5, 13, 14, and 18-20 were previously canceled. Accordingly, claims 1, 2, 6-12, and 15-17 are presented for further examination.

2. This action is a non-final rejection.

Continued Examination Under 37 CFR 1.114

3. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 4/13/2009 has been entered.

Response to Arguments

4. Applicant's arguments have been carefully considered but because the new limitations suffer from § 112, first paragraph issues (see below), the arguments are not persuasive. Additionally, Applicant's arguments with respect to claims 7-9, 10-12, and 17 have been considered but are not persuasive because the new limitation fails to limit the scope of the claims. The amendment to apparatus claims 7 and 10 do not affect the scope of the claims because they do not structurally differentiate the claimed invention over the prior art.

While features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. *See MPEP § 2114* (citing *In re Schreiber*, 128 F.3d 1473, 1477-78 (Fed. Cir. 1997)). More particularly, "a claim containing a 'recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus' if the prior art apparatus teaches all the structural limitations of the claim." *Id* (citing *Ex parte Masham*, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987).

Applicant's claims 7 and 10 are interpreted as apparatus claims. The amendment to these claims recites "wherein the routers communicate to each other the type-of-service distance to the address of the client." Applicant should also note that one example of claim language that may raise a question as to the limiting effect of the language in a claim is "wherein" clauses. *MPEP § 2111.04*. The amendment merely attempts to differentiate the claimed information object repository and network from the cited prior art by functional claim language. The amendment does not in any way affect the structure of those claimed apparatuses.

This principle can be clearly seen in claim 7 which is directed to an information object repository but the limitation is directed to the functionality of routers external to the repository. Those routers are obviously not part of the claimed repository and therefore they cannot affect the repository's structure. Thus, the limitation cannot limit the scope of the claimed repository. Similar reasoning applies to claim 9 which is directed to a network that comprises a client and repository. For the foregoing reasons, the rejection of claims 7-9, 10-12, and 17 as set forth in the previous office action are maintained.

To overcome these issues, Applicant should amend the claims in manner that changes the structure of the claimed apparatuses. For example, Applicant may consider amending the network of claim 10 to include web routers that comprise storage means for storing the WILD update message that comprise the three components as further discussed below in the "Allowable Subject Matter" section. This limitation would change the structure of the network because it would require a router and a storage means that contains the distance information of the other routers.

Allowable Subject Matter

5. In the interests of expediting the prosecution of this case, the examiner would like to suggest subject matter found in Applicant's provisional application, 60/200401, which if incorporated into the independent claims would likely distinguish the claims over the prior art. Specifically, at pages 21-22, the provisional describes a WILD update message that is used for communicating the mappings of client address *ranges* to neighboring routers, where the WILD update message contains three components: (1) a basic routing update; (2) a list of TOS distance from web caches to destinations; and (3) a list of TOS distance from redirecting routers to destinations.

In examiner's view, the use of this message to communicate the mappings from a redirecting router to its neighboring routers is patentably distinct over the prior art. If this feature was incorporated into the independent claims to further describe the inter-router communication process, the examiner believes that the claims would be in condition for allowance.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 1, 7, and 10 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The claims are rejected because of the following language: "mapping an address of a client to one or more addresses of information object repositories and to one or more addresses of routers that have a best type-of-service distance to the address of the client."

There is no description in Applicant's specification of this feature. A similar but not identical feature seems to be described in Applicant's provisional application, 60/200401, which states that an update message (between routers) is used to convey "the mappings of *client address ranges* to the addresses of Web caches and *redirecting* Web routers by specifying the best TOS distance known from a web cache or web router to a specific *client address range*" (emphasis added). Thus, the provisional describes providing mappings to addresses ranges and not just a specific client address.

Additionally, the provisional and Applicant's specification disclose providing mappings to redirecting Web routers and not just regular routers. This is consistent with Applicant's specification which also distinguishes between the two:

"The set of *redirecting Web routers* should be known by all the *Web routers* of the system, while a Web router that does not serve as a redirecting Web router need not be known by

all other Web routers of the system. Web routers may execute WILD (or another protocol) to map the address of a client into: (a) one or more addresses of Web caches or the content server that has the best TOS distance to the client address, and (b) one or more addresses of *redirecting Web routers* that have the best TOS distance to the client address." [Applicant's publication 20020016860].

Based on the foregoing discussion, the limitation is not completely supported by Applicant's specification. Appropriate amendment to make the claims commensurate with the specification and the provisional application is required.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1, 7, and 10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claims recite "mapping an address of a client to one or more addresses of information object repositories and to one or more addresses of routers *that have a best type-of-service distance to the address of the clien*t." It seems from Applicant's arguments and from the specification that the repositories also have a best type-of-service distance to the address of the client but this is not clear from the claims. Applicant should amend the claims to more clearly recite that the repositories also have a best TOS distance to the client's address.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 1, 2, 6, and 16 are rejected under 35 U.S.C. § 103(a) as being unpatentable over McCanne et al, U.S Patent No. 6.415.323 ["McCanne"], in view of Yamano, U.S. Patent No. 6.314.088, in further view of an Kraft, U.S Patent No. 6.529.939, in further view of Grove et al, U.S. Patent No. 6.820.133 ["Grove"], in further view of Kavak et al, U.S. Patent No. 6.687.731 ["Kavak"].

9. The examiner cited Kavak in the PTO-892 filed on 8/13/2004.

10. As to claim 1, McCanne discloses a method comprising:

receiving a first request for an information object at an anycast address, wherein the request is received at an information object repository selected according to specified performance metrics [column 11 «lines 58-59» | column 15 «line 67» to column 16 «line 8» : *a client submits a request to the ARN, where the ARN advertises an anycast address* | column 19 «lines 15-17»] by mapping an address of a client to one or more addresses of information object repositories and to one or more addresses of routers that have a best type-of-service distance to the address of the client [Grove, column 5 «lines 59-62» | column 7 «lines 45-51»] by executing a Web Information Locator by Distance (WILD) communication protocol between the routers that runs on top of a Transmission Control Protocol (TCP) [column 16 «lines 13-17» : *McCanne describes using a local monitoring protocol to map a client to another information object*

repository by utilizing the protocol to determine the candidate service node based on load and availability information; this functionality corresponds to the claimed WILD protocol | column 17 «lines 45-47» : *McCanne does not expressly disclose that the monitoring protocol "runs on top" of TCP however such a feature is implied from McCanne's disclosure. McCanne discloses utilizing TCP to connect to service nodes within the network (column 15, lines 1-6). McCanne additionally discloses that the ARN performs the service node selection protocol over the network. Therefore, one of ordinary skill in the art would have reasonably inferred that the local monitoring protocol is run on top of TCP (see also, column 19, lines 11-13)*];

resolving the anycast address to a corresponding unicast network address for the information object, wherein the resolving includes transmitting a second request for the corresponding unicast network address in response to the first request [See response to arguments above | column 10 «lines 40-43» | column 15 «lines 61-65» | column 16 «lines 17-26» *anycast address is resolved to a service node's unicast address in response to the client's initial request for content from the ARN*], awaiting an anycast resolution response to the second request for a predetermined time; and returning a failure message if the response to the second request is not received within the predetermined time [Kraft, column 3 «lines 25-37], wherein the second request is a single IP packet having the anycast network address [column 16 «lines 52-53» : *service request to the anycast address A. This teaching implies that the request has the anycast network address*];

instructing the information object repository to obtain a copy of the information object at the corresponding unicast network address [Yamano, Figure 5 | column 1 «lines 21-30» | column 4 «lines 30-36» | column 5 «line 64» to column 6 «line 15»]; and

returning the corresponding unicast network address in response to the second request , the anycast resolution response is a single IP packet having the corresponding unicast network address [column 10 «lines 40-43» | column 16 «lines 17-29» : *a redirection message that directs a client to a "normally-addressed and routed (unicast) service node"*].

McCanne does not explicitly disclose four limitations: (1) mapping a client's address to a repository and a router address that has a best TOS distance to the client's address; (2) waiting for an anycast resolution response to the second request for a predetermined time and returning a failure message if the response to the second request is not received within the predetermined time; (3) instructing the information object repository to obtain a copy of the information object at the corresponding unicast address; and (4) communicating the mappings between the routers.

With respect to the first limitation, Grove is directed to a method for increasing the performance of network traffic over the Internet [abstract]. To achieve this goal, Grove utilizes a mapping feature that maps an address of a client to an information object repository using anycast [Figure 11 | column 19 «lines 15-37» where : Grove's server's read on the claimed information object repository] as well as mapping the client's address to a router address that has a best type-of service distance to the client's address [column 32 «lines 41-53» where : Grove's c-node reads on the claimed router since the c-node connects the client to the object repository]. Grove further discloses that his c-nodes execute a protocol between the c-nodes to determine the best distance between the c-nodes and the clients [column 5 «lines 59-62» | column 7 «lines 45-51»]. It would have been obvious to one of ordinary skill in the art to have modified McCanne's anycast system with Grove's mapping features. Grove's features improve on McCanne's system by mapping the client to both the repository as well as the routers within the network which

improve the network's performance by selecting the most efficient network path [see Grove, column 7 «lines 45-51»].

With respect to the second limitation, while McCanne does disclose transmitting a second request for a corresponding unicast address, McCanne does not disclose the waiting feature as claimed, such a feature was well known in the art at the time of Applicant's invention. For example, Kraft discloses updating the client about the failure of an information request when a response to the request is not received within a certain timeout period [column 3 «lines 25-37]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement this failure message utility into McCanne's information object repository to keep the clients informed that their request for information could not be handled at the specified unicast address and to signal to the user to reconnect to the service after losing the connection [see Kraft, column 3 «lines 38-60»].

While Kraft is not directed to anycast or address resolution requests, the functionality of waiting for a timeout period and providing error messages when a response is not received during the period is well known functionality that would be applicable to any type of request or addressing protocol. Within McCanne's system, Kraft's error message capability would enable the ARN to inform clients that a service node has not responded within a certain timeout period.

With respect to third limitation, McCanne does disclose that the repository is capable of servicing the clients' requests directly but does not explicitly disclose obtaining a copy at the corresponding unicast address [column 14 «lines 27-32» | column 16 «lines 3-11»]. Yamano discloses a repository (that receives an request for an object at an anycast address) that obtains a copy of the requested information object at a corresponding unicast address [Figure 5 | column 1

«lines 21-30» | column 4 «lines 30-36» | column 5 «line 64» to column 6 «line 15» where : Yamano's configuration server node 11 retrieves the object requested by the client from another server node's ATM address (unicast)]. Therefore Yamano teaches that a repository, that acts as a redirector such as one seen in McCanne, can also retrieve content from other repositories within the network. One of ordinary skill in the art would have been able to incorporate Yamano's functionalities into McCanne's repository (redirector) to allow the repository to retrieve content from other repositories at the corresponding unicast address to be able to directly service the request in the future. Since McCanne already teaches that his repository can directly handle content requests, implementing Yamano's teaching would only enhance McCanne's capabilities.

Finally, with respect to the fourth limitation, Grove implies that the routers share the mappings because he discloses an embodiment where the IP routers are responsible for performing the mapping and selection steps [column 19 «lines 15-20»]. Kavak further discloses that when IP routers perform the mapping and selecting steps, the routers communicate mappings with neighboring routers to help in the process [column 5 «lines 12-26»: Kavak discloses each router maintaining distance values to a server and forwarding this information to its neighbors].

It would have been obvious to one of ordinary skill in the art to have modified McCanne's system to include the distance sharing functionality taught by Kavak. Such a modification is an example of applying a known technique (Kavak's routers forwarding distance information to neighboring routers) to a known system (McCanne's anycast system) ready for improvement to yield predictable results (McCanne's routers now share distance information with other another to have a more complete view of the network). *See MPEP § 2143*.

11. As to claim 2, McCanne discloses the method of claim 1 further comprising returning the unicast address for the information object [column 10 «lines 35-43»].

12. As to claim 6, McCanne discloses the method of claim 5 wherein the performance metrics comprise one or more of: reliability of a path from the selected information object repository, available bandwidth in said path, average delay from the selected information object repository to a source of the request, average processing delay at the selected information object repository and loads on the selected information object repository [column 17 «lines 45-46» | column 18 «lines 64-67» : monitors load characteristics].

13. As to claim 16, McCanne discloses the first request is received at the information object repository selected without regard as to whether the information object is actually stored at the information object repository [column 8 «lines 14-23» | column 11 «lines 58-62» where: the client sends an initial request to the ARN (information object repository). McCanne stresses that the only requirement for directing a client to a service node is that the node is the closest to the client; therefore, the implication is that there is no regard as to whether or not the content is on the service node].

14. Claims 7, 8, 10, 11, and 15 are rejected under 35 U.S.C §103(a) as being unpatentable over McCanne, in view of Yamano, in further view of Grove.

15. All citations are to McCanne unless otherwise noted.

16. As to claim 7, McCanne discloses an information object repository configured to resolve a network layer anycast address of a network to a corresponding unicast network address in response to a first request for an information object at the network layer anycast address, wherein the resolving includes transmitting a second request for the corresponding unicast network address in response to the first request [column 10 «lines 40-43» | column 15 «lines 61-65» | column 16 «lines 17-26» *anycast address is resolved to a service node's unicast address in response to the client's initial request for content from the ARN*], to obtain a copy of the information object at the unicast network address [Yamano, Figure 5 | column 1 «lines 21-30» | column 4 «lines 30-36» | column 5 «line 64» to column 6 «line 15»], and to receive an anycast resolution response in response to the second request to resolve the network layer anycast address [column 10 «lines 40-43» | column 16 «lines 17-29» : *a redirection message that directs a client to a "normally-addressed and routed (unicast) service node"*], wherein the information object repository is selected according to specified performance metrics [column 11 «lines 58-59» | column 15 «line 67» to column 16 «line 8» : *a client submits a request to the ARN, where the ARN advertises an anycast address* | column 19 «lines 15-17»] by communicating mappings of an address of a client to one or more addresses of information object repositories and to one or more addresses of routers that have a best type-of-service distance to the address of the client between routers of the network [Grove, column 5 «lines 59-62» | column 7 «lines 45-51»] by executing a Web Information Locator by Distance (WILD) communication protocol between the routers that runs on top of a Transmission Control Protocol (TCP) [column 16 «lines 13-17» :

McCanne describes using a local monitoring protocol to map a client to another information object repository by utilizing the protocol to determine the candidate service node based on load and availability information; this functionality corresponds to the claimed WILD protocol | column 17 «lines 45-47» : *McCanne does not expressly disclose that the monitoring protocol "runs on top" of TCP however such a feature is implied from McCanne's disclosure. McCanne discloses utilizing TCP to connect to service nodes within the network (column 15, lines 1-6). McCanne additionally discloses that the ARN performs the service node selection protocol over the network. Therefore, one of ordinary skill in the art would have reasonably inferred that the local monitoring protocol is run on top of TCP (see also, column 19, lines 11-13)*], wherein the second request to resolve is a single IP packet that includes the network layer anycast network address [column 16 «lines 52-53» : *service request to the anycast address A. This teaching implies that the request has the anycast network address*], wherein the anycast resolution response is a single IP packet that includes the network layer unicast address [column 10 «lines 40-43» | column 16 «lines 17-29» : *a redirection message that directs a client to a "normally-addressed and routed (unicast) service node"*].

McCanne does not explicitly disclose three limitations: (1) mapping a client's address to a repository and a router address that has a best TOS distance to the client's address; (2) waiting for an anycast resolution response to the second request for a predetermined time and returning a failure message if the response to the second request is not received within the predetermined time; and (3) instructing the information object repository to obtain a copy of the information object at the corresponding unicast address.

See the rejection of claim 1 for combination and motivation.

17. As to claim 10, as it does not teach or further define over the prior art references, they are similarly rejected for at least the same reasons set forth for claim 7.

18. As to claim 8, McCanne discloses the information object repository of claim 7 being further configured to resolve the network layer anycast address by transmitting the second request for the network layer unicast address and awaiting the response thereto [column 11 «lines 24-36 and lines 58-65», column 12 «lines 16-24» | column 13 «lines 35-42»].

19. Claim 11 is a network that contains the information object repository of claim 8. Therefore claim 11 is rejected for the same reasons as set forth for claim 8.

20. As to claim 15, McCanne discloses the network of claim 14 wherein the anycast resolution response to the second request for the network layer unicast address is returned by a host having the network layer unicast address [column 16 «lines 18-26» where: 'S" service node is the host with the network layer unicast address].

21. Claims 9 and 12 are rejected under 35 U.S.C §103(a) as being unpatentable over McCanne, in view of Yamano, in further view of Grove, in further view of Kraft.

22. As to claims 9 and 12, McCanne discloses the information object repository of claim 7 to monitor if the request for the network layer unicast address is not received within a timeout

period [column 13 <lines 35-36>] but does not specifically disclose that a failure message is sent to the source of the request for the information object.

Kraft discloses updating the client about the failure of an information request when a response to the request is not received within a certain timeout period [column 3 «lines 25-37]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement this failure message utility into McCanne's information object repository to keep the clients informed that their request for information could not be handled at the specified unicast address and to signal to the user to reconnect to the service after losing the connection [see Kraft, column 3 «lines 38-60»].

23. Claim 17 is rejected under 35 U.S.C §103(a) as being unpatentable over McCanne, Yamano, and Grove, in further view of McCanne, U.S Patent No. 6.611.872 ["McCanne.2"].

24. As to claim 17, McCanne does not disclose the single IP packet comprising the second request for the network layer unicast address and the single IP packet comprising the anycast resolution response to the second request for the network layer unicast address further comprise an IP header and a UDP header.

However, in the same field of invention, McCanne.2 discloses that the single IP packet comprising the request for the network layer unicast address and the single IP packet comprising the response to the request for the network layer unicast address further comprise an IP header and a UDP header [Figure 6 «items 204, 210, 220» (where overlay header is in UDP format) | column 4 «lines 54-56» | column 30 «lines 30-41» where : the packets sent through the network

all have an IP header and a UDP overlay header]. It would have been obvious to one of ordinary skill in the art to modify McCanne's packets to include both IP and UDP headers as taught by McCanne.2. The benefits of incorporating both protocol headers into a packet enable "clients to connect to overlay routers using unicast UDP or TCP through a redirection and location service" [McCanne.2, column 4 «lines 3-8»]. Note that McCanne is directed towards providing a redirection and location service [abstract].

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DOHM CHANKONG whose telephone number is (571)272-3942. The examiner can normally be reached on Monday-Friday [8:30 AM to 4:30 PM].

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Follansbee can be reached on 571.272.3964. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Dohm Chankong/
Primary Examiner, Art Unit 2452